

Exercise 1 Let $f(x) = x^3$.

(a) Compute $AV_{[2,2+h]}$. Your answer will involve the variable h .

$$AV_{[2,2+h]} = \boxed{12 + 6h + h^2}.$$

(b) Compute $AV_{[x,x+2]}$. Your answer will involve the variable x .

$$AV_{[x,x+2]} = \boxed{3x^2 + 6x + 4}.$$

(c) Compute $AV_{[x,x+h]}$. Your answer will involve the variables x and h .

$$AV_{[x,x+h]} = \boxed{3x^2 + 3xh + h^2}.$$
